

# BRITISH CHEMICAL ABSTRACTS

## Foreword.

The "A" section of the abstracts, dealing with pure chemistry, will be issued to Fellows of the Chemical Society and other subscribers at the end of each month, whilst the "B" section, covering applied chemistry, will appear each week, and will be circulated along with the *Journal of the Society of Chemical Industry* to members of that Society and to special subscribers.

The price of the "A" and the "B" sections is £3 14s. each per annum, post free (including joint Index), but Fellows of the Chemical Society may obtain the "B" abstracts for £1 10s. 0d., whilst Members of the Society of Chemical Industry may obtain the "A" abstracts for £2 0s. 0d. [The yearly membership subscriptions are £3 0s. 0d. in the case of the Chemical Society and £2 10s. 0d. in the case of the Society of Chemical Industry.] Copies of "A" or "B" abstracts printed on one side of the paper, and suitable for filing purposes, may be obtained at reasonable charges.

The general basis of classification adopted in the two sections is printed below. For the guidance of readers of "A" abstracts, it should be pointed out that abstracts of analytical papers may be found not only at the end of each section as tabulated below, but sometimes also, when the analytical method described has a very specialised object, in the body of the section, according to the material with which the analytical method deals.

In order to facilitate reference to the "A" abstracts, the appropriate number and letter (I c, IV d, etc.), as shown in the accompanying statement, will be printed at the top of each page on which the respective abstracts appear.

It has been decided that, in future, when ml. or mil is used in original papers to denote the thousandth part of a litre, ml. shall be used in the abstracts; c.c. will be used only in abstracts of those papers where volumes are given as c.c. or some variant (ccm., cmc., etc.). The difference is very small (of the order of 3 parts in 10<sup>5</sup>), but may be significant in very precise work.

## A—PURE CHEMISTRY.

### General, Physical, and Inorganic Chemistry.

#### I. Sub-atomics.

- (a) Atomic spectra. Infra-red, visible, ultra-violet, X-ray emission and absorption spectra, Zeeman and Stark effects, Compton effect.
- (b) Electrical properties: Ionisation potentials of atoms, photo-electric and thermionic effects.
- (c) Properties of electrons, positrons, and gaseous ions. Magnetic properties.
- (d) Isotopes—atomic weights.
- (e) Radioactive processes. Neutrons.
- (f) Other sub-atomic processes. Artificial radioactivity. Nuclear chemistry. Cosmic rays.
- (g) Theories of atomic structure and sub-atomic mechanism.
- (h) Atomic dimensions (except in solid state).

#### II. Molecular Structure.

- (a) Molecular spectra: Emission and absorption spectra of organic and inorganic substances. Fluorescence, luminescence, and phosphorescence. Raman effect.
- (b) Ionisation potentials. Photo-electric effect with compounds. Rectifiers.
- (c) Conductivity. Dielectric constants. Dipole moment.
- (d) Molecular volumes.
- (e) Optical properties: Molecular refraction, dispersion, rotatory dispersion, optical activity, magnetic rotation, Kerr effect.
- (f) Theories of molecular structure. Valency, secondary valency, including co-ordination, electronic and magnetic theories, constitutional formulæ of inorganic substances. Deuterium and its compounds.
- (g) Molecular sizes and forces. Surface tension.

#### III. Crystal Structure.

- (a) X-Ray examination.
- (b) Crystal models. X-Ray results for elements and compounds. Electron diffraction.
- (c) Magnetic and electrical properties of crystals: Piezo-electricity; magnetostriction.
- (d) Optical properties. Rotatory dispersion.
- (e) Compressibility. Tensile strength. Plasticity.
- (f) Mesomorphic state.

#### IV. Physical Properties of Pure Substances (not included above).

- (a) Molecular weights.
- (b) Electrical constants: Conductance, superconductivity, thermoelectric power, light-sensitivity, etc. Magnetic susceptibility. Sonic properties.
- (c) Optical constants.
- (d) Thermal constants: Specific heats, heat of change of state, boiling points, freezing points, transition points.
- (e) Chemical constants.
- (f) Pressures and volumes: Density, vapour pressure, coefficient of expansion, equations of state, theory of corresponding states. Heat-conductivity. Joule-Thomson effect.
- (g) Compressibility.
- (h) Viscosity; fluidity; plasticity.
- (i) Diffusion.

#### V. Solutions and Mixtures.

- (a) Gaseous mixtures, liquid mixtures (excluding dilute solutions), solid solutions (including alloys), property-composition curves.
- (b) Miscibility of liquids and of solids. Solubility of gases and solids in liquids.

- (c) Distribution phenomena : Partition, absorption, adsorption, surface films, surface energy, membrane effects.
- (d) Dilute solutions : (i) Non-electrolytic solutions; (ii) Solutions of electrolytes. Colligative properties; non-colligative properties.
- (e) Disperse systems. Preparation and properties of suspensions, emulsions, smokes, foams, sols, gels, jellies. Coagulation, peptisation, ageing, cataphoresis, imbibition, etc.

#### VI. Kinetic Theory. Thermodynamics.

- (a) Equilibrium in homogenous systems; equilibrium, dissociation, ionisation constants, activity coefficients, etc.
- (b) Equilibrium in heterogeneous systems; uni- and multi-component systems; phase rule.
- (c) Thermochemistry.

#### VII. Electrochemistry.

- (a) Electrical conductance.
- (b) Transport phenomena.
- (c) Electrode and diffusion potentials; o.m.f., concentration cells, etc.
- (d) Polarisation, overvoltage, passivity, etc.
- (e) Application of electrochemical methods.

#### VIII. Reactions.

- (a) Velocity studies in (i) Homogeneous systems; (ii) Heterogeneous systems.
- (b) Catalysed reactions : (i) and (ii) as above.
- (c) Electrode reactions.
- (d) Photochemical reactions.
- (e) Irradiated reactions.

#### IX. New or Improved Methods of Preparing Substances (arranged according to periodic table) etc.

#### X. Analysis.

#### XI. Apparatus.

#### XII. Lecture Experiments and Historical.

### XIII. Geochemistry.

#### Organic Chemistry.

#### XIV. Aliphatic.

- (a) Hydrocarbons and their halogen, nitro-, and nitroso-derivatives.
- (b) Alcohols. Ethers. Alkyl salts. Sulphur compounds, including sulphonic acids.
- (c) Acids. Thio- and sulpo-acids.
- (d) Aldehydes. Aldoximes.
- (e) Ketones and diketones. Ketoximes.
- (f) Sugars, glucosides, and carbohydrates.
- (g) Amines. Amino-alcohols. Amino-acids. Cyano-acids, thiocyno-acids. Amino-aldehydes and -ketones.
- (h) Amides (including cyanic, cyanuric, and thiocyanic acids).
- (i) Nitriles, carbylamines, metallic cyanides.
- (j) Amidoximes, imino-ethers.
- (k) Diazo-compounds.

- (l) Phosphorus, arsenic, antimony, boron, silicon, etc. compounds.
- (m) Aliphatic organo-metallic compounds.

#### XV. Homocyclic.

- (a) Hydrocarbons  $C_nH_{2n}$  to  $C_nH_{2n-6}$ , and their halogen, nitroso-, and nitro-derivatives. Sulphonic acids.
- (b) Hydrocarbons  $C_nH_{2n-8}$  to  $C_nH_{2n-4}$  and derivatives.
- (c) Amines. Includes anilides of aliphatic acids, carbamides, carbamates and sulphonic acids. Diamines and polyamines.
- (d) Azoxy-compounds.
- (e) Azo-
- (f) Hydrazo- "
- (g) Diazo-
- (h) Diazoamino- "
- (i) Phenols and their substitution products; phenol ethers; aminophenols; thiophenols; sulphides; sulphonic acids.
- (j) Alcohols; amino-alcohols; di- and tri-arylecarbinols and their derivatives; sterols.
- (k) Carboxylic acids; includes nitriles of the respective acids, amides and hydrazides; substitution products.
- (l) Aldehydes and their derivatives.
- (m) Ketones "
- (n) Quinones; benzoquinone, naphthaquinone, anthraquinone, and others; their substitution derivatives.
- (o) Terpenes.

#### XVI. Miscellaneous unclassifiable substances.

#### XVII. Heterocyclic etc.

- (a) Oxygen ring compounds.
- (b) Sulphur ring compounds.
- (c) Compounds containing both O and S rings.
- (d) Nitrogen ring compounds : one N.
- (e) " " " " more than one N.
- (f) Rings containing O and N, S and N, etc.
- (g) Alkaloids.
- (h) Organo-metallic compounds.
- (i) Proteins.

#### XVIII. Analysis.

#### XIX. Biochemistry.

- (a) Respiration (other than tissue respiration).
- (b) Blood : Gases; constituents; reactions (haemolysis, anti-body formation, etc.).
- (c) Organs and their Proximate Constituents : Analytical data of constituents of organs; pure substances isolated from organs.
- (d) Secretions : Milk; lymph, etc.
- (e) Excretions : Urine; other excretions.
- (f) Diseases : Natural and experimental (in alphabetical order).
- (g) Metabolism : General; special (including tissue respiration); intermediary; fate of substances in the animal body.
- (h) Physiological Action : Variation of physiological conditions; action of drugs; toxicology.
- (i) Enzymes : General; specific.
- (j) Micro-organisms : Yeasts, moulds, protozoa, bacteria.
- (k) Hormones.
- (l) Vitamins.
- (m) Vegetable Physiology : General; reproduction and fertilisation; respiration; growth; diseases; poisons.
- (n) Plant constituents.
- (o) Analysis.

### B.—APPLIED CHEMISTRY.

- I. General; Plant; Machinery.
- II. Fuel; Gas; Mineral Oils.
- III. Organic Intermediates.
- IV. Dyestuffs.
- V. Fibres; Textiles; Cellulose; Paper.
- VI. Bleaching; Dyeing; Printing; Finishing.
- VII. Acids; Alkalies; Salts; Non-Metallic Elements.
- VIII. Glass; Ceramics.
- IX. Building Materials.
- X. Metals; Metallurgy, including Electrometallurgy.
- XI. Electrotechnics.
- XII. Fats; Oils; Waxes.

- XIII. Paints; Pigments; Varnishes; Resins.
- XIV. Indiarubber.
- XV. Leather and Glue.
- XVI. Agriculture.
- XVII. Sugars; Starches; Gums.
- XVIII. Fermentation Industries.
- XIX. Foods.
- XX. Medicinal Substances; Essential Oils.
- XXI. Photographic Materials and Processes.
- XXII. Explosives.
- XXIII. Sanitation; Water Purification.

## JOURNALS FROM WHICH ABSTRACTS ARE MADE.

The following is a list of the principal Journals from which abstracts are made (directly or indirectly) by the Bureau of Chemical Abstracts. Further information regarding any of these Journals may be obtained from the Secretary of the Bureau.

| ABBREVIATED TITLE.                    | JOURNAL.  | ABBREVIATED TITLE.                          | JOURNAL.  |
|---------------------------------------|---|---|---|
| Abh. Böhm. Akad. .                    | Abhandlungen der Böhmischen Akademie.                                 | Ann. Off. nat. Comb. liq.                   | Annales de l'Office nationale des Combustibles liquides.  |
| Acta Bot. Fennica .                   | Acta Botanica Fennica.  | Ann. Physik                                 | Annalen der Physik.   |
| Acta Physicochim. U.R.S.S.            | Acta Physicochimica U.R.S.S.  | Ann. Physique                               | Annales de Physique.  |
| Acta Phytochim.                       | Acta Phytochimica.  | Ann. R. Staz. Chim. Agrar. Sperim.          | Annali della R. Stazione Chimico Agraria Sperimentale di Roma.  |
| Acta Sci. Fennicae .                  | Acta Societatis Scientiarum Fennicae.                                 | Ann. Sect. Platine                          | Annales du Secteur Platine et des autres Métaux Précieux.   |
| Agric. Eng.                           | Agricultural Engineering.   | Ann. Soc. Sci. Bruxelles                    | Annales de la Société Scientifique de Bruxelles.  |
| Agric. Gaz. New South Wales           | Agricultural Gazette of New South Wales.                              | Ann. sci. Univ. Jassy.                      | Annales scientifiques de l'Université de Jassy.   |
| Agric. J. Brit. Guiana                | Agricultural Journal of British Guiana.                               | Apoth.-Ztg.                                 | Apotheker-Zeitung.  |
| Agric. Live-stock India               | Agriculture and Live-stock in India.                                  | Arb. Biol. Reichanst. Land- u. Forst-wirts. | Arbeiten der Biologisches Reichsanstalt für Land- und Forstwirtschaft.  |
| Agric. Res. Inst., Pusa, Rep. (Bull.) | Agricultural Research Institute, Pusa, Reports and Bulletins.         | Arch. Biol.                                 | Archives de Biologie.   |
| Allgem. Oel- Fett-Ztg.                | Allgemeine Oel- und Fett-Zeitung.                                     | Arch. Eisenhüttenw.                         | Archiv. für das Eisenhüttenwesen.   |
| Allgem. Z. Bierbrau. .                | Allgemeine Zeitschrift für Bierbrauerei und Malzfabrikation.          | Arch. exp. Path. Pharm.                     | Archiv für experimentelle Pathologie und Pharmakologie.   |
| Aluminium                             | Aluminium.  | Arch. Farm. sperim.                         | Archivio di Farmacologia sperimentale e Scienze affini.   |
| Amer. Dyestuff Rep.                   | American Dyestuff Reporter.   | Arch. Gewerbepath. Gewerbehyg.              | Archiv für Gewerbepathologie und Gewerbehygiene.  |
| Amer. Gas J. .                        | American Gas Journal.   | Arch. Hyg. Bakt.                            | Archiv der Hygiene und Bakteriologie.   |
| Amer. Inst. Min. Met. Eng. Publ.      | American Institute of Mining and Metallurgical Engineers Publication. | Arch. Int. Med.                             | Archives of Internal Medicine.  |
| Amer. J. Bot. .                       | American Journal of Botany.   | Arch. Ist. Biochim. Ital.                   | Archivio dello Istituto Biochimico Italiano.  |
| Amer. J. Dis. Children                | American Journal of Diseases of Children.                             | Arch. Mikrobiol.                            | Archiv für Mikrobiologie.   |
| Amer. J. Pharm.                       | American Journal of Pharmacy.   | Arch. Min. Soc. Sci. Varsovie               | Archives de Minéralogie de la Société des Sciences de Varsovie (Archiwum Mineralogiczne Towarzystwa Naukowego Warszawskiego). |
| Amer. J. Physiol.                     | American Journal of Physiology.                                       | Arch. Néerland.                             | Archives Néerlandaises de sciences exactes et naturelles.   |
| Amer. J. Publ. Health                 | American Journal of Public Health and the Nation's Health.            | Arch. Néerland. Physiol.                    | Archives Néerlandaises de Physiologie de l'Homme et des Animaux.  |
| Amer. J. Sci. .                       | American Journal of Science.  | Arch. Pflanzenbau                           | Archiv für Pflanzenbau.   |
| Amer. Min.                            | American Mineralogist.  | Arch. Pharm. .                              | Archiv der Pharmazie.   |
| Amer. Ink Maker                       | American Ink Maker.   | Arch. Protistenk.                           | Archiv für Protistenkunde.  |
| Amer. Paint J.                        | American Paint Journal.   | Arch. Sci. phys. nat. .                     | Archives des Sciences physique et naturelles.   |
| Amer. Potato J.                       | American Potato Journal.  | Arch. Suikerind. Ned.-Indie .               | Archief voor de Suikerindustrie in Nederlandsch-Indie.  |
| Anal. Asoc. Quím. Argentina           | Anales de la Asociación Química Argentina.                            | Arch. Tierernährung u. Tierzucht            | Archiv für Tierernährung und Tierzucht.   |
| Anal. Fis. Quím.                      | Anales de la Sociedad Española de Física y Química.                   | Arch. Wärmewirts. .                         | Archiv für Wärmewirtschaft.   |
| Anal. Inst. invest. cient. tecn.      | Anales del Instituto de investigaciones científicas y tecnológicas.   | Arh. Hemiju .                               | Arhiv za Hemiju i Farmaciju.  |
| Analyst .                             | Analyst.  | Arizona Agric. Exp. Sta. Bull.              | Arizona Agricultural Experiment Station Bulletin.   |
| Anat. Rec.                            | Anatomical Record.  | Arkiv Kemi, Min., Geol. .                   | Arkiv för Kemi, Mineralogi och Geologi.   |
| Angew. Bot.                           | Angewandte Botanik.   | Arxius                                      | Arxius de l'Escola Superior d'Agricultura, Catalunya.   |
| Angew. Chem. .                        | Angewandte Chemie (changed from Z. angew. Chem. in 1932).             | Astrophys. J. .                             | Astrophysics Journal.   |
| Anilinokras. Prom. .                  | Anilinokrasotschnaja Promischlennosti.                                | Atti R. Accad. Lincei                       | Atti della Reale Accademia Nazionale dei Lincei.  |
| Ann. Acad. Brasil. Sci.               | Annals da Academia Brasileira de Ciencias.                            | Atti R. Accad. Sci. Torino .                | Atti della Reale Accademia delle Scienze di Torino.   |
| Ann. Acad. Sci. Fennicae              | Annales Academiæ Scientiarum Fennicae.                                | Austral. J. Exp. Biol.                      | Australian Journal of Experimental Biology and Medicine.  |
| Annalen .                             | Justus Liebig's Annalen der Chemie.                                   | B.P.  | British Patent.   |
| Ann. agron.                           | Annales agronomiques.   | Ber.  | Berichte der deutschen chemischen Gesellschaft.   |
| Ann. Appl. Biol.                      | Annals of Applied Biology.  |   |   |
| Ann. Bot.                             | Annals of Botany.   |   |   |
| Ann. di Bot.                          | Annali di Botanica.   |   |   |
| Annali Chim. Appl. .                  | Annali di Chimica Applicata.  |   |   |
| Ann. Chim.                            | Annales de Chimie.  |   |   |
| Ann. Chim. Analyt. .                  | Annales de Chimie Analytique et de Chimie Appliquée.                  |   |   |
| Ann. Falsif.                          | Annales des Falsifications.   |   |   |
| Ann. Guébbard-Séverine                | Annales Guébbard-Séverine.  |   |   |
| Ann. Inst. Anal. Phys. Chim.          | Annales de l'Institut d'Analyse Physico-chimique.                     |   |   |
| Ann. Inst. Pasteur .                  | Annales de l'Institut Pasteur.  |   |   |
| Ann. Inst. Platine                    | Title changed to Ann. Sect. Platine.                                  |   |   |
| Ann. Mines Belg.                      | Annales des Mines de Belgique.  |   |   |

| ABBREVIATED TITLE.                         | JOURNAL.  | ABBREVIATED TITLE.                          | JOURNAL.  |
|--|---|---|---|
| Ber. dout. bot. Ges. .                     | Berichte der deutschen botanischen Gesellschaft.  | Bull. Acad. Sci. Roumaine                   | Bulletin de la Section Scientifique de l'Académie Roumaine.   |
| Ber. Ges. Kohlentech.                      | Berichte der Gesellschaft für Kohlentech.   | Bull. Agric. Chem. Soc. Japan               | Bulletin of the Agricultural Chemical Society of Japan.   |
| Ber. Ohara Inst. landw. Forsch.            | Berichte des Ohara Instituts für landwirtschaftliche Forschungen.   | Bull. Amer. Ceram. Soc.                     | Bulletin of the American Ceramic Society.   |
| Ber. Sächs. Akad. Wiss.                    | Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig.   | Bull. Assoc. Chim. Suor.                    | Bulletin de l'Association des Chimistes de Sucrierie et de Distillerie.                                       |
| Ber. Ukrain. Wiss. Forsch. physikal. Chem. | Berichte des Ukrainischen Wissenschaftlichen Forschungsinstituts für physikalische Chemie.  | Bull. Chem. Soc. Japan                      | Bulletin of the Chemical Society of Japan.  |
| Berlin. klin. Woch. .                      | Berliner klinische Wochenschrift.   | Bull. Dept. Agric. Kenya                    | Bulletin of the Department of Agriculture of Kenya.   |
| Bied. Zentr.                               | Biedermann's Zentralblatt.  | Bull. Dept. Agric. S. Africa.               | Bulletin of the Department of Agriculture of South Africa.  |
| Bied. Zentr. (Tierernähr.)                 | Biedermann's Zentralblatt (Tierernährung).  | Bull. Entomol. Res. .                       | Bulletin of Entomological Research.   |
| Biochem. J.                                | Biochemical Journal.  | Bull. Forest Exp. Stat. Meguro              | Bulletin of the Forest Experiment Station, Meguro, Tokyo.   |
| Biochem. Z.                                | Biochemische Zeitschrift.   | Bull. Imp. Inst.                            | Bulletin of the Imperial Institute.   |
| Biochimia                                  | Biochimia.  | Bull. Inst. Min. Met.                       | Bulletin of the Institution of Mining and Metallurgy.   |
| Board Greenkeeping Res. J.                 | Board of Greenkeeping Research Journal.   | Bull. Inst. Phys. Chem. Res. Japan          | Bulletin of the Institute of Physical and Chemical Research, Japan (Rikagaku Kenkyujo Ihô).                   |
| Bodenk. Pflanzenernähr.                    | Bodenkunde und Pflanzenernährung.   | Bull. Inst. Pin                             | Bulletin de l'Institut du Pin.  |
| Bol. Acad. Nac. Ciencias, Cordoba          | Boletín de la Academia Nacional des Ciencias, Cordoba.  | Bull. Johns Hopkins Hosp.                   | Bulletin of the Johns Hopkins Hospital.   |
| Bol. Soc. Quim. Peru                       | Boletín de la Sociedad Química del Peru.  | Bull. Math. Phys. Bucarest                  | Bulletin de Mathématiques et de Physique pure et appliquées de l'Ecole Polytechnique "Roi Carol II" Bucarest. |
| Boll. Chim. farm.                          | Bollettino Chimico-Farmaceutico.  | Bull. Mat. Grasses                          | Bulletin des Matières Grasses.  |
| Boll. Sez. Ital. .                         | Bollettino della Sezione Italiana.  | Bull. Photogrammetrie                       | Bulletin de Photogrammétrie.  |
| Boll. Soc. Geol. Ital. .                   | Bollettino della Società Geologica Italiana.  | Bull. School Mines and Met., Univ. Missouri | Bulletin of the School of Mines and Metallurgy, University of Missouri.                                       |
| Boll. Soc. Ital. Biol. sperim.             | Bollettino della Società Italiana di Biologia sperimentale.   | Bull. Sci. Pharmacol. .                     | Bulletin des Sciences Pharmacologiques.   |
| Boll. Soc. Med.-Chirurg.                   | Bollettino della Società Medico-Chirurgica, Pavia.  | Bull. Sericult. Japan                       | Bulletin of Sericulture and Silk Industry, Japan.   |
| Boll. Staz. Sperim. Ind. Carta Fibre Tess. | Bollettino del Reparto Fibre Tessili Vegetali della R. Stazione Sperimentale per le Industrie della Carta e delle Fibre Tessili Vegetali. | Bull. Soc. chim.                            | Bulletin de la Société chimique de France.  |
| Boll. Off. Staz. Sperim. Ind. Essenze      | Bollettino Ufficiale della R. Stazione Sperimentale per l'Industria delle Essenze e dei Derivati dagli Agrumi in Reggio Calabria.         | Bull. Soc. chim. Belg.                      | Bulletin de la Société chimique de Belgique.  |
| Boll. Off. Staz. Sperim. Ind. Pelli        | R. Stazione Sperimentale per l'Industria delle Pelli e delle materie concianti, Bollettino Ufficiale.                                     | Bull. Soc. Chim. biol.                      | Bulletin de la Société de Chimie biologique.  |
| Bot. Archiv                                | Botanisches Archiv.   | Bull. Soc. Chim. Yougoslav.                 | Bulletin de la Société Chimique du Royaume de Yougoslavie.  |
| Bot. Gaz.                                  | Botanical Gazette.  | Bull. Soc. d'Encour. .                      | Bulletin de la Société d'Encouragement pour l'Industrie Nationale.  |
| Brass. Malt.                               | Brasserie et Malterie.  | Bull. Soc. Franç. Min.                      | Bulletin de la Société Française de Minéralogie.  |
| Brau- u. Malzind.                          | Brau- u. Malzindustrie.   | Bull. Soc. Franç. Phot.                     | Bulletin de la Société Française de Photographie et de Cinématographie.                                       |
| Braunkohle.                                | Braunkohle.   | Bull. Soc. Ind. Mulhouse                    | Bulletin de la Société Industrielle de Mulhouse.  |
| Braunkohlenarchiv .                        | Braunkohlenarchiv.  | Bull. U.S. Geol. Survey                     | Bulletin of the U.S. Geological Survey.   |
| Brennstoff-Chem.                           | Brennstoff-Chemie.  | Canada Dept. Mines Publ.                    | Canada Department of Mines Publications.  |
| Brewers' J.                                | Brewers' Journal.   | Canad. Dairy & Ice Cream J.                 | Canadian Dairy and Ice Cream Journal.   |
| Brit. Guiana Dept. Agric. Bull.            | British Guiana Department of Agriculture Bulletin.  | Canad. Chem. Met.                           | Canadian Chemistry and Metallurgy.  |
| Brit. J. Phot. .                           | British Journal of Photography.   | Canad. J. Res. .                            | Canadian Journal of Research.   |
| Brit. J. Phys. Med. .                      | British Journal of Physical Medicine.   | Caoutchouc et Gutta-Percha                  | Le Caoutchouc et le Gutta-Percha.   |
| Brit. Med. J. .                            | British Medical Journal.  | Cellulosechem. .                            | Cellulosechemie.  |
| Brit. Plastics .                           | British Plastics and Moulded Products Trader.   | Cement and Lime Manuf.                      | Cement and Lime Manufacture.  |
| Bul. Chim.                                 | Buletinul Chimie.   | Cereal Chem. .                              | Cereal Chemistry.   |
| Bul. Chim. Soc. Romane                     | Buletinul de Chimie pura si aplicata al Societatii Romane de Chimie.  | Chaleur et Ind.                             | Chaleur et Industrie.   |
| Bul. Soc. Chim. Romania                    | Buletinul Societatii de Chimie din Romania.   | Ch. Abs. .                                  | Chemical Abstracts.   |
| Bul. Soc. Fiz. Romania                     | Buletinul Bihunar al Societatii de Fizică din Romania.  | Chem. Age                                   | Chemical Age.   |
| Bul. Soc. Romane Stiin.                    | Buletinul Societatii Romane de Stiinte.   | Chem. App.                                  | Chemische Apparatur.  |
| Bull. Acad. Med. Roumanie                  | Bulletin de l'Académie de Médecine de Roumanie.   | Chem. Eng. Min. Rev.                        | Chemical Engineering and Mining Review.   |
| Bull. Acad. Polonaise                      | Bulletin Internationale de l'Académie Polonaise des Sciences et des Lettres.  | Chem. Erde                                  | Chemie der Erde.  |
| Bull. Acad. roy. Belg.                     | Académie royale de Belgique— Bulletin de la Classe des Sciences.  | Chem. Fabr.                                 | Die Chemische Fabrik.   |
| Bull. Acad. Sci. Agra & Oudh               | Bulletin of the Academy of Sciences of Agra and Oudh.   | Chem. and Ind.                              | Chemistry and Industry.   |
| Bull. Acad. Sci. U.R.S.S.                  | Bulletin de l'Académie des Sciences de l'Union des Républiques Socialistes.   | Chem. Ind.                                  | Chemische Industrie.  |
|  |   | Chem. Listy                                 | Chemické Listy pro Vědu a Průmysl. Organ de la "Česká chemická Společnost pro Vědu a Průmysl."                |
|  |   | Chem. Met. Eng.                             | Chemical and Metallurgical Engineering.   |

| ABBREVIATED TITLE.                        | JOURNAL.  | ABBREVIATED TITLE.                    | JOURNAL.  |
|---|---|---------------------------------------|---|
| Chem. Social. Agric. .                    | Chemisation of Socialistic Agriculture (U.S.S.R.).                              | Flora .                               | Flora.  |
| Chem. Trade J.                            | Chemical Trade Journal.   | Florida Agric. Exp. Sta. Bull.        | Florida Agricultural Experiment Station Bulletin.                         |
| Chem. Weekblad                            | Chemisch Weekblad.  | Food                                  | Food.   |
| Chem.-Ztg.                                | Chemiker-Zeitung.   | Food Manuf. .                         | Food Manufacture.   |
| Chem. Zentr. .                            | Chemisches Zentralblatt.  | Food Res.                             | Food Research.  |
| Cheshunt Agric. Exp. Sta. Ann. Rep.       | Cheshunt Agricultural Experiment Station Annual Reports.                        | Forstarchiv                           | Forstarchiv.  |
| Chim. o l'Ind. .                          | La Chimica e l'Industria.   | Foundry Trade J.                      | Foundry Trade Journal.  |
| Chim. et Ind. .                           | Chimie et Industrie.  | Fruit Prod. J. .                      | Fruit Products Journal.   |
| Chinese Med. J.                           | Chinese Medical Journal.  | Fuel                                  | Fuel in Science and Practice.   |
| Chinese J. Physics .                      | Chinese Journal of Physics.   | Fuel Econ.                            | Fuel Economist.   |
| Chinese J. Physiol. .                     | Chinese Journal of Physiology.  | Fuel Econ. Rev.                       | Fuel Economy Review.  |
| Coal Carbonisation .                      | Coal Carbonisation.   | G.P.                                  | German Patent.  |
| Coll. Czech. Chem. Comm.                  | Collection of Czechoslovak Chemical Communications.                             | Gas Ind. .                            | Gas Industry.   |
| Collegium                                 | Collegium.  | Gas J. .                              | Gas Journal.  |
| Coll. Eng.                                | Colliery Engineering.   | Gas Times                             | Gas Times.  |
| Coll. Guard.                              | Colliery Guardian.  | Gas- u. Wasserfach .                  | Gas- und Wasserfach.  |
| Colorado Agric. Exp. Sta. Bull.           | Colorado Agricultural Experiment Station Bulletin.                              | Gas World                             | Gas World.  |
| Combustion                                | Combustion.   | Gazzetta .                            | Gazzetta chimica italiana.  |
| Compt. rend. .                            | Comptes rendus hebdomadaires des Séances de l'Académie des Sciences.            | Geol. Mag.                            | Geological Magazine.  |
| Compt. rend. Acad. Agric. France          | Comptes rendus hebdomadaires des Séances de l'Académie d'Agriculture de France. | Georgia Agric. Exp. Sta. Bull.        | Georgia Agricultural Experiment Station Bulletin.                         |
| Compt. rend. Acad. Sci. U.R.S.S.          | Comptes rendus de l'Académie des Sciences de l'U.R.S.S.                         | Ges. Abh. Kennt. Kohle                | Gesammelte Abhandlungen der Kenntnisse der Kohle.                         |
| Compt. rend. Soc. Biol.                   | Comptes rendus des Séances de la Société de Biologie.                           | Glückauf                              | Glückauf.   |
| Compt. rend. Trav. Lab. Carlsberg         | Comptes rendus des Travaux du Laboratoire Carlsberg.                            | Gummi-Ztg.                            | Gummi-Zeitung.  |
| Contr. Boyce Thompson Inst.               | Contributions from Boyce Thompson Institute.                                    | Hawaii Agric. Exp. Stat. Bull.        | Hawaii Agricultural Experiment Station Bulletins.                         |
| Cornell Univ. Agric. Exp. Sta. Bull.      | Cornell University Agricultural Experiment Station Bulletin.                    | Helv. Chim. Acta                      | Helvetica Chimica Acta.   |
| Current Sci.                              | Current Science.  | Hilgardia                             | Hilgardia.  |
| Cyprus Agric. J.                          | Cyprus Agricultural Journal.  | Hosiery Tr. J. .                      | Hosiery Trade Journal.  |
| Dansk Tidsskr. Farm.                      | Dansk Tidsskrift for Farmaci.   | Imp. Bur. Soil Sci. Tech. Comm.       | Imperial Bureau of Soil Science, Technical Communications.                |
| Delaware Agric. Exp. Sta. Bull.           | Delaware Agricultural Experiment Station Bulletin.                              | Indian J. Agric. Sci.                 | Indian Journal of Agricultural Science.                                   |
| Dept. Chem. S. Australia, Bull.           | Department of Chemistry, South Australia, Bulletins.                            | Indian J. Med. Res. .                 | Indian Journal of Medical Research.                                       |
| Deut. med. Woch.                          | Deutsche medizinische Wochenschrift.  | Indian J. Physics                     | Indian Journal of Physics.  |
| East Malling Res. Sta., Ann. Repts., etc. | East Malling Research Station, Annual Reports, etc.                             | Indian J. Vet. Sci.                   | Indian Journal of Veterinary Science.                                     |
| Ecology .                                 | Ecology.  | Indian Lac Res. Inst. Bull.           | Indian Lac Research Institute Bulletin.                                   |
| Econ. Geol.                               | Economic Geology.   | India-rubber J.                       | India-rubber Journal.   |
| Econ. Proc. Roy. Dubl. Soc.               | Economic Proceedings of the Royal Dublin Society.                               | Ind. Chem.                            | Industrial Chemist.   |
| Empire Cotton Growing Rev.                | Empire Cotton Growing Review.   | Ind. Eng. Chem.                       | Industrial and Engineering Chemistry.                                     |
| Empire Cotton Growing Rep. Exp. Sta.      | Empire Cotton Growing Reports of the Experimental Station.                      | Ind. Eng. Chem. (Anal.)               | Industrial and Engineering Chemistry, Analytical Edition.                 |
| Empire J. Exp. Agric.                     | Empire Journal of Experimental Agriculture.                                     | Int. Rev. Agric.                      | International Review of Agriculture.                                      |
| Endocrinol. .                             | Endocrinology.  | Int. Sugar J. .                       | International Sugar Journal.  |
| Engineer .                                | Engineer.   | Iron Steel Inst. Carnegie Schol. Mem. | Iron and Steel Institute, Carnegie Scholarship Memoirs.                   |
| Engineering                               | Engineering.  | J.C.S.                                | Journal of the Chemical Society.  |
| Eng. and Min. J.                          | Engineering and Mining Journal.   | Jahrb. geol. Reichsanst.              | Jahrbuch der geologischen Reichsanstalt.                                  |
| Eng. News-Rec.                            | Engineering News-Record.  | Jahrb. Min.                           | Neues Jahrbuch für Mineralogie, Geologie und Paläontologie.               |
| Enzymologia .                             | Enzymologia.  | Jahrb. Min. Beil.-Bd.                 | Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Beilage-Band. |
| Ernährung                                 | Die Ernährung.  | Jahrb. Radioaktiv. .                  | Jahrbuch der Radioaktivität und Elektronik.                               |
| Ernähr. Pflanze                           | Ernährung der Pflanze.  | Jahrb. wiss. Bot.                     | Jahrbuch für wissenschaftliche Botanik.                                   |
| F.P.                                      | French Patent.  | Japan. J. Med. Sci. .                 | Japanese Journal of Medical Sciences.                                     |
| Facts about Sugar .                       | Facts about Sugar.  | Japan. J. Physics                     | Japanese Journal of Physics.  |
| Farbe u. Lack .                           | Farbe und Lack.   | Japan Nickel Rev. .                   | Japan Nickel Review.  |
| Farben-Chem. .                            | Farben-Chemiker.  | Jernk. Ann.                           | Jernkontorets Annaler.  |
| Farben-Ztg.                               | Farben-Zeitung.   | J. Agric. Chem. Soc. Japan            | Journal of the Agricultural Chemical Society of Japan.                    |
| Farve og Lak .                            | Farve og Lak.   | J. Agric. Res. .                      | Journal of Agricultural Research.   |
| Fermentforsch. .                          | Fermentforschung.   | J. Agric. Sci. .                      | Journal of Agricultural Science.  |
| Fort. Feeding Stuffs J.                   | Fertiliser, Feeding Stuffs and Farm Supplies Journal.                           | J. Amer. Ceram. Soc.                  | Journal of the American Ceramic Society.                                  |
| Fette u. Seifen                           | Fette und Seifen.   | J. Amer. Chem. Soc.                   | Journal of the American Chemical Society.                                 |
| Fenerfest                                 | Feuerfest.  | J. Amer. Leather Chem. Assoc.         | Journal of the American Leather Chemists' Association.                    |
| Feuerungstech.                            | Feuerungstechnik.   | J. Amer. Med. Assoc.                  | Journal of the American Medical Association.                              |
| Finska Kem. Medd. .                       | Finska Kemistisamfundets Meddelanden (Suomen Kemistiseuran Tiedonantoja).       | J. Amer. Pharm. Assoc.                | Journal of the American Pharmaceutical Association.                       |
|   |   | J. Amer. Soc. Agron. .                | Journal of the American Society of Agronomy.                              |
|   |   | J. Amer. Soc. Mech. Eng.              | Journal of the American Society of Mechanical Engineers.                  |

| ABBREVIATED TITLE.                 | JOURNAL.  | ABBREVIATED TITLE.                   | JOURNAL.  |
|------------------------------------|---|--------------------------------------|---|
| J. Amer. Water Works Assoc.        | Journal of the American Water Works Association.                            | J. Inst. Brew. . . .                 | Journal of the Institute of Brewing.  |
| J. Annamalai Univ. .               | Journal of the Annamalai University.  | J. Inst. Electr. Eng. .              | Journal of the Institution of Electrical Engineers.                         |
| J. Appl. Chem. Russia              | Journal of Applied Chemistry, Russia.                                       | J. Inst. Fuel . . .                  | Journal of the Institute of Fuel.   |
| J. Assoc. Off. Agric. Chem.        | Journal of the Association of Official Agricultural Chemists.               | J. Inst. Metals . . .                | Journal of the Institute of Metals.   |
| J. Austral. Inst. Agric. Sci.      | Journal of the Australian Institute of Agricultural Science.                | J. Inst. Petroleum Tech.             | Journal of the Institution of Petroleum Technologists.                      |
| J. Bact. . . .                     | Journal of Bacteriology.  | J. Inst. Sewage Purif.               | Journal of the Institute of Sewage Purification.                            |
| J. Biochem. Japan .                | Journal of Biochemistry, Japan.   | J. Iron and Steel Inst.              | Journal of the Iron and Steel Institute.                                    |
| J. Biol. Chem. . .                 | Journal of Biological Chemistry.  | J. Jap. Ceram. Assoc.                | Journal of the Japanese Ceramic Association.                                |
| J. Brit. Dairy Farmers' Assoc.     | Journal of the British Dairy Farmers' Association.                          | J. Landw. . . .                      | Journal für Landwirtschaft.   |
| J. Brit. Wood Pres. Assoc.         | Journal of the British Wood Preserving Association.                         | J. Marine Biol. Assoc.               | Journal of the Marine Biological Association of the United Kingdom.         |
| J. Canad. Min. Inst. .             | Journal of the Canadian Mining Institute.                                   | J. Med. Res. . . .                   | Journal of Medical Research.  |
| J. Cancer Res. Comm. Sydney        | Journal of the Cancer Research Committee of the University of Sydney.       | J. Min. Agric. . . .                 | Journal of the Ministry of Agriculture.                                     |
| J. Cell. Comp. Physiol.            | Journal of Cellular and Comparative Physiology.                             | J. Min. Agric. N. Ire. land          | Journal of the Ministry of Agriculture of Northern Ireland.                 |
| J. Cellulose Inst. Tokyo           | Cellulose Industry, Journal of the Cellulose Institute, Tokyo.              | J. New England Water Works Assoc.    | Journal of the New England Water Works Association.                         |
| J. Chem. Educ. . .                 | Journal of Chemical Education.  | J. Nutrition . . .                   | Journal of Nutrition.   |
| J. Chem. Eng. China .              | Journal of Chemical Engineering, China.                                     | J. Oil Col. Ohem. Assoc. . . .       | Journal of the Oil and Colour Chemists' Association.                        |
| J. Chem. Ind. Russ. .              | Journal of Chemical Industry, Russia.                                       | J. Opt. Soc. Amer. .                 | Journal of the Optical Society of America.                                  |
| J. Chem. Met. Soc. S. Africa       | Journal of the Chemical, Metallurgical, and Mining Society of South Africa. | J. Org. Chem. . . .                  | Journal of Organic Chemistry.   |
| J. Chem. Physics . .               | Journal of Chemical Physics.  | J. Path. Bact. . . .                 | Journal of Pathology and Bacteriology.                                      |
| J. Chem. Soc. Japan .              | Journal of the Chemical Society of Japan. (Nippon Kwagaku Kwai Shi.)        | J. Pharm. Chim. . .                  | Journal de Pharmacie et de Chimie.  |
| J. Chim. phys. . . .               | Journal de Chimie physique.   | J. Pharm. Exp. Ther.                 | Journal of Pharmacology and Experimental Therapeutics.                      |
| J. Chinese Chem. Soc.              | Journal of the Chinese Chemical Society.                                    | J. Pharm. Soc. Japan                 | Journal of the Pharmaceutical Society of Japan. (Yakugakuzasshi.)           |
| J. Coll. Agric. Hokkaido           | Journal of the College of Agriculture, Hokkaido Imperial University, Japan. | J. Physical Chem. . .                | Journal of Physical Chemistry.  |
| J. Coll. Agric. Tokyo .            | Journal of the College of Agriculture, Imperial University of Tokyo, Japan. | J. Phys. Chem. Russ.                 | Shurnal Fizitscheskoi Khimii.   |
| J. Coll. Eng. Tokyo .              | Journal of the College of Engineering, Imperial University of Tokyo.        | J. Physiol. . . .                    | Journal of Physiology.  |
| J. Coll. Sci. Tokyo .              | Journal of the College of Science, Imperial University of Tokyo.            | J. Physiol. Path. gén.               | Journal de Physiologie et de Pathologie générale.                           |
| J. Counc. Sci. Ind. Res. Australia | Journal of the Council of Scientific and Industrial Research of Australia.  | J. Phys. Radium . .                  | Journal de Physique et le Radium.   |
| J. Dairy Res. . . .                | Journal of Dairy Research.  | J. Pomology . . .                    | Journal of Pomology and Horticultural Science.                              |
| J. Dairy Sci. . . .                | Journal of Dairy Science.   | J. pr. Chem. . . .                   | Journal für praktische Chemie.  |
| J. Dept. Agric. I.F.S.             | Journal of the Department of Agriculture of the Irish Free State.           | J. Proc. Asiatic Soc. Bengal         | Journal and Proceedings of the Asiatic Society of Bengal.                   |
| J. Dept. Agric. Kyushu             | Journal of the Department of Agriculture, Kyushu Imperial University.       | J. Proc. Austral. Chem. Inst.        | Journal and Proceedings of the Australian Chemical Institute.               |
| J. Dept. Agric. S. Australia       | Journal of the Department of Agriculture, South Australia.                  | J. Proc. Roy. Soc. New South Wales . | Journal and Proceedings of the Royal Society of New South Wales.            |
| J. Dept. Agric. Victoria           | Journal of the Department of Agriculture, Victoria.                         | J. Res. Assoc. Brit. Rubber Manufs.  | Journal of the Research Association of British Rubber Manufacturers.        |
| J. Dept. Agric. W. Australia       | Journal of the Department of Agriculture, Western Australia.                | J. Res. Nat. Bur. Stand.             | Journal of Research of the National Bureau of Standards.                    |
| J. Ecology . . . .                 | Journal of Ecology.   | J. Roy. Agric. Soc. .                | Journal of the Royal Agricultural Society.                                  |
| J. Econ. Entomol. .                | Journal of Economic Entomology.   | J. Roy. Hort. Soc. .                 | Journal of the Royal Horticultural Society.                                 |
| J. Egypt. Med. Assoc.              | Journal of the Egyptian Medical Association.                                | J. Roy. Microscop. Soc.              | Journal of the Royal Microscopical Society.                                 |
| J. Electrodep. Tech. Soc.          | Journal of the Electrodepositors Technical Society.                         | J. Roy. Soc. West Australia          | Journal of the Royal Society of West Australia.                             |
| J. Exp. Biol. . . .                | Journal of Experimental Biology.  | J. Roy. Tech. Coll. .                | Journal of the Royal Technical College (Glasgow).                           |
| J. Exp. Med. . . .                 | Journal of Experimental Medicine.   | J. Rubber Res. Inst. Malaya          | Journal of the Rubber Research Institute of Malaya.                         |
| J. Franklin Inst. . .              | Journal of the Franklin Institute.  | J. Sci. Hiroshima Univ.              | Journal of Science of the Hiroshima University.                             |
| J. Fuel Soc. Japan .               | Journal of the Fuel Society of Japan.                                       | J. Sci. Instr. . . .                 | Journal of Scientific Instruments.  |
| J. Gen. Chem. Russ. .              | Journal of General Chemistry, Russia (formerly J. Russ. Phys. Chem. Soc.).  | J. Sci. Tech. India .                | Journal of Science and Technology, India.                                   |
| J. Gen. Physiol. . .               | Journal of General Physiology.  | J. Scot. Met. Soc. .                 | Journal of the Scottish Meteorological Society.                             |
| J. Geol. . . . .                   | Journal of Geology.   | J. Soc. Arts . . . .                 | Journal of the Royal Society of Arts.                                       |
| J. Geol. Soc. Tokyo .              | Chishitsugaku Zasshi (Journal of the Geological Society of Tokyo).          | J.S.C.I. . . . .                     | Journal of the Society of Chemical Industry.                                |
| J. Hygiene . . . .                 | Journal of Hygiene.   | J. Soc. Chem. Ind. Japan             | Journal of the Society of Chemical Industry, Japan. (Kōgyō Kwagaku Zasshi.) |
| J. Indian Chem. Soc.               | Journal of the Indian Chemical Society.                                     | J. Soc. Dyers and Col.               | Journal of the Society of Dyers and Colourists.                             |
| J. Indian Inst. Sci. .             | Journal of the Indian Institute of Science.                                 | J. Soc. Glass Tech. .                | Journal of the Society of Glass Technology.                                 |
| J. Ind. Hyg. . . .                 | Journal of Industrial Hygiene and Toxicology.                               | J. Soc. Leather Trades' Chem.        | Journal of the International Society of Leather Trades' Chemists.           |
| J. Infect. Dis. . .                | Journal of Infectious Diseases.   |                                      |   |



| ABBREVIATED TITLE.                    | JOURNAL.  | ABBREVIATED TITLE.                       | JOURNAL.  |
|---------------------------------------|---|--|---|
| J. S. African Chem. Inst.             | Journal of the South African Chemical Institute.                                    | Missouri Agric. Exp. Sta. Res. Bull.     | Missouri Agricultural Experiment Station Research Bulletin.                                 |
| J. South-East. Agric. Coll.           | Journal of the South-Eastern Agricultural College, Wye, Kent.                       | Mitt. Kohlenforschungsinst. Prag         | Mitteilungen des Kohlenforschungsinstituts in Prag.   |
| J. State Med.                         | Journal of State Medicine.  | Mitt. Lebensm. Hyg.                      | Mitteilungen aus dem Gebiete der Lebensmitteluntersuchungen und Hygiene.                    |
| J. Text. Inst.                        | Journal of the Textile Institute.   | Mitt. Materialprüf.                      | Mitteilungen aus dem Materialprüfungamt zu Gross-Lichterfelde West.                         |
| J. Univ. Bombay                       | Journal of the University of Bombay.  | Mitt. med. Ges. Tokyo                    | Mitteilungen der medizinischen Gesellschaft zu Tokyo.                                       |
| J. Usines Gaz                         | Journal des Usines à Gaz.   | Mitt. Path. Inst. K. Univ. Japan         | Mitteilungen aus dem pathologischen Institut der Kaiserlichen Universität zu Sendai, Japan. |
| J. Washington Acad. Sci.              | Journal of the Washington Academy of Sciences.                                      | Mitt. Textilforsch. Krefeld              | Mitteilungen der Textilforschungsanstalt Krefeld e.V.                                       |
| J. West Scotland Iron Steel Inst.     | Journal of the West of Scotland Iron and Steel Institute.                           | Monatsh.                                 | Monatshefte für Chemie und verwandte Teile anderer Wissenschaften.                          |
| Kautschuk                             | Kautschuk.  | Montana Agric. Exp. Sta. Bull.           | Montana Agricultural Experiment Station Bulletin.   |
| Keijo J. Med.                         | Keijo Journal of Medicine.  | Month. J. Inst. Metals                   | Monthly Journal of the Institute of Metals.   |
| K. Svenska Vet. Akad. Handl.          | Kongliga Svenska Vetenskaps Akademiens Handlingar.                                  | Month. Not. Roy. Astr. Soc.              | Monthly Notices of the Royal Astronomical Society, London.                                  |
| Kentucky Agric. Exp. Stat. Bull.      | Kentucky Agricultural Experimental Station, Bulletin.                               | Month. Rep. Dept. Agric. N. Ireland      | Monthly Reports of the Department of Agriculture of Northern Ireland.                       |
| Keram. Rundsoh.                       | Keramisch Rundschau.  | Mühlenlab.                               | Das Mühlenlaboratorium.   |
| Koks i Chim.                          | Koks i Chimia.  | Münch. med. Woch.                        | Münchener medizinische Wochenschrift.   |
| Kolloid-Beih.                         | Kolloid-Beihfte.  | Nachr. Ges. Wiss. Göttingen              | Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen.                           |
| Kolloid-Shur.                         | Kolloidni Shurnal.  | Nat. Butter & Cheese J.                  | National Butter and Cheese Journal.   |
| Kolloid-Z.                            | Kolloid-Zeitschrift.  | Nat. Paint Var. Assoc. Circ.             | National Paint, Varnish, and Lacquer Association, Inc., Circular.                           |
| Kunststoffe                           | Kunststoffe.  | Nature                                   | Nature.   |
| Lait                                  | Le Lait.  | Naturwetensch.                           | Natuurwetenschappelijk Tijdschrift.   |
| Lancet                                | The Lancet.   | Naturwiss.                               | Die Naturwissenschaften.  |
| Landw. Jahrb.                         | Landwirtschaftliche Jahrbücher.   | New Hamps. Agric. Exp. Sta. Bull.        | New Hampshire Agricultural Experiment Station Bulletin.                                     |
| Landw. Versuchs-Stat.                 | Die landwirtschaftlichen Versuchs-Stationen.  | New Jersey Agric. Exp. Sta. Bull.        | New Jersey Agricultural Experiment Station Bulletin.  |
| Latvij. Univ. Raksti.                 | Latvijas Universitātes Raksti, Kimijas Fakultātes Serija.                           | New Phytol.                              | New Phytologist.  |
| London Shellac Res. Bur., Tech. Paper | London Shellac Research Bureau, Technical Paper.                                    | New York Agr. Expt. Sta. Bull.           | New York State Agricultural Experiment Station Bulletins.                                   |
| Louisiana Planter                     | Louisiana Planter.  | New York (Geneva) Agric. Exp. Sta. Bull. | New York (Geneva) Agricultural Experiment Station Bulletin.                                 |
| Malay. Agric. J.                      | Malayan Agricultural Journal.   | New Zealand Dominion Lab. Rept.          | New Zealand Dominion Laboratory Reports.  |
| Mass. Agric. Exp. Sta. Bull.          | Massachusetts Agricultural Experiment Station Bulletin.                             | New Zealand J. Sci. Tech.                | New Zealand Journal of Science and Technology.  |
| Materic Plast.                        | Materie Plastiche.  | Nova Acta Soc. Sci.                      | Nova Acta Regiae Societatis Scientiarum Upsaliensis.  |
| Medd. K. Vetenskaps-akad. Nobel-Inst. | Meddelanden från Kongl-Vetenskaps-akademiens Nobel-Institut.                        | Nutr. Abs.                               | Nutrition Abstracts and Reviews.  |
| Med. Doswiad.                         | Medycyna Doswiadczalna i Spoieczna.   | Öfers. Finska Vet.-Soc.                  | Öfersigt af Finska Vetenskaps-Societätens Förhandlingar, Helsingfors.                       |
| Mem. Accad. Lincei                    | Memorie della Reale Accademia Nazionale dei Lincei.                                 | Oel u. Kohle                             | Oel und Kohle.  |
| Mem. Accad. Sci. Torino               | Memorie della Reale Accademia delle Scienze di Torino.                              | Österr. Chem.-Ztg.                       | Österreichische Chemiker-Zeitung.   |
| Mem. Coll. Agric. Kyoto               | Memoirs of the College of Agriculture, Kyoto Imperial University.                   | Off. Digest.                             | Official Digest of the Federation of Paint and Varnish Production Clubs.                    |
| Mem. Coll. Sci. Kyoto                 | Memoirs of the College of Science, Kyoto Imperial University.                       | Ohio Agric. Exp. Sta. Bull.              | Ohio Agricultural Experiment Station Bulletin.  |
| Mem. Dept. Agric. India               | Memoirs of the Department of Agriculture in India.                                  | Oil and Soap                             | Oil and Soap.   |
| Mem. Inst. Chem. Ukrain. Acad. Sci.   | Memoirs of the Institute of Chemistry, Ukrainian Academy of Sciences.               | Oklahoma Agric. Exp. Sta. Bull.          | Oklahoma Agricultural Experiment Station Bulletin.  |
| Mem. Manchester Phil. Soc.            | Memoirs and Proceedings of the Manchester Literary and Philosophical Society.       | Oversigt Danske Vid. Selsk.              | Oversigt over det Kongelige Danske Videnskabskabernes Selskabs Forhandlingar.               |
| Mém. Poudres                          | Mémorial des Poudres.   | Pacific Pulp and Paper Ind.              | Pacific Pulp and Paper Industry.  |
| Mém. Soc. Ing. Civ. France            | Mémoires et Compte rendu des Travaux de la Société des Ingénieurs Civils de France. | Paint, Oil, and Chem. Rev.               | Paint, Oil, and Chemical Review.  |
| Metal Ind.                            | Metal Industry.   | Paint Manuf.                             | Paint Manufacture.  |
| Metal Progr.                          | Metal Progress.   | Paint Tech.                              | Paint Technology.   |
| Metall n. Erz                         | Metall und Erz.   | Paint and Var. Prod. Man.                | Paint and Varnish Production Manager.   |
| Metallges. Rev.                       | Metallgesellschaft Periodic Review.   | Paper                                    | Paper.  |
| Metallurgia                           | Metallurgia.  | Paper-Maker                              | Paper-Maker and British Paper Trade Journal.  |
| Met. & Alloys                         | Metals and Alloys.  | Paper Trade J.                           | Paper Trade Journal.  |
| Metals Tech.                          | Metals Technology.  |  |   |
| Metrop. Water Bd. Rep.                | Metropolitan Water Board Reports.   |  |   |
| Mich. Agric. Exp. Sta. Bull.          | Michigan Agricultural Experiment Station Bulletin.                                  |  |   |
| Mikrochem.                            | Mikrochemie.  |  |   |
| Milch. Forsch.                        | Milchwirtschaftliche Forschungen.   |  |   |
| Milch. Zentr.                         | Milchwirtschaftliches Zentralblatt.   |  |   |
| Milk Ind.                             | Milk Industry.  |  |   |
| Milk Plant Month.                     | Milk Plant Monthly.   |  |   |
| Min. Mag.                             | Mineralogical Magazine and Journal of the Mineralogical Society.                    |  |   |
| Min. & Met.                           | Mining and Metallurgy.  |  |   |

| ABBREVIATED TITLE.                 | JOURNAL.  | ABBREVIATED TITLE.                      | JOURNAL.   |
|------------------------------------|---|---|--|
| Papier-Fabr. .                     | Papier-Fabrikant.   | Proc. Nova Scotian Inst. Sci.           | Proceedings of the Nova Scotian Institute of Science.  |
| Pedology                           | Pedology.   | Proc. Phil. Soc. Glasgow                | Proceedings of the Glasgow Philosophical Society.  |
| Paint., Pig., Ver.                 | Peinture, Pigment, Vernis.  | Proc. Physical Soc. .                   | Proceedings of the Physical Society of London.   |
| Perf. & Essent. Oil Rec.           | Perfumery and Essential Oil Record.   | Proc. Physiol. Soc. .                   | Proceedings of the Physiological Society.  |
| Petroleum                          | Petroleum (German).   | Proc. Roy. Inst.                        | Proceedings of the Royal Institution of Great Britain.   |
| Pflüger's Archiv                   | Archiv für die gesamte Physiologie des Menschen und der Tiere.                          | Proc. Roy. Irish Acad.                  | Proceedings of the Royal Irish Academy.  |
| Pharm. J.                          | Pharmaceutical Journal.   | Proc. Roy. Soc.                         | Proceedings of the Royal Society.  |
| Pharm. Weekblad                    | Pharmaceutisch Weekblad.  | Proc. Roy. Soc. Edin.                   | Proceedings of the Royal Society of Edinburgh.   |
| Pharm. Ztg.                        | Pharmazeutische Zeitung.  | Proc. Roy. Soc. Med..                   | Proceedings of the Royal Society of Medicine.  |
| Pharm. Zentr. .                    | Pharmazeutische Zentralhalle.   | Proc. Roy. Soc. Queensland              | Proceedings of the Royal Society of Queensland   |
| Philippine Agric.                  | Philippine Agriculturist.   | Proc. Roy. Soc. Tasmania                | Proceedings of the Royal Society of Tasmania.  |
| Philippine J. Sci.                 | Philippine Journal of Science.  | Proc. Sci. Assoc., Vizianagram          | Proceedings of the Science Association, Maharajah's College, Vizianagram.  |
| Phil. Mag.                         | Philosophical Magazine (The London, Edinburgh, and Dublin).                             | Proc. Soc. Exp. Biol. Med.              | Proceedings of the Society for Experimental Biology and Medicine.  |
| Phil. Trans.                       | Philosophical Transactions of the Royal Society of London.                              | Proc. S. Wales Inst. Eng.               | Proceedings of the South Wales Institute of Engineers.   |
| Phot. Ind.                         | Photographische Industrie.  | Proc. Tech. Sect. Paper Makers' Assoc.  | Proceedings of the Technical Section of the Paper Makers' Association of Great Britain and Ireland.                              |
| Phot. J. .                         | Photographic Journal.   | Proc. U.S. Nat. Mus. .                  | Proceedings of the United States National Museum.  |
| Phot. Korr.                        | Photographische Korrespondenz.  | Protoplasma                             | Protoplasma.   |
| Physica                            | Physica.  | Przemysl Chem.                          | Przemysl Chemiczny.  |
| Physical Rev. .                    | Physical Review.  | Publ. Fac. Sci. Univ. Masaryk           | Publications de la Faculté des Sciences de l'Université Masaryk (Splay vydávané Přírodovědeckou Facultou Masarykovy University). |
| Physics                            | Physics.  | Pulp and Paper Mag. Canada              | Pulp and Paper Magazine of Canada.   |
| Physikal. Z.                       | Physikalische Zeitschrift.  | Quart. J. Exp. Physiol.                 | Quarterly Journal of Experimental Physiology.  |
| Physikal. Z. Soviet-union          | Physikalische Zeitschrift der Soviet-union.   | Quart. J. Geol. Soc. .                  | Quarterly Journal of the Geological Society.   |
| Phytopath.                         | Phytopathology.   | Quart. J. Med.                          | Quarterly Journal of Medicine.   |
| Phytopath. Z. .                    | Phytopathologische Zeitschrift.   | Quart. J. Pharm.                        | Quarterly Journal of Pharmacy and Pharmacology.  |
| Plant Physiol. .                   | Plant Physiology.   | Queensland J. Agric..                   | Queensland Journal of Agriculture.   |
| Planta (Z. wiss. Biol.)            | Planta (Zeitschrift für wissenschaftliche Biologie).                                    | Rayon Text. Month. .                    | Rayon Textile Monthly.   |
| Plast. Maasi                       | Plastitschkie Massi.  | Rec. Australian Mus.                    | Records of the Australian Museum.  |
| Poultry Sci.                       | Poultry Science.  | Rec. trav. bot. Néerlandaises.          | Recueil des travaux botaniques Néerlandaises.  |
| Proc. Acad. Sci. Agra and Oudh     | Proceedings of the Academy of Sciences of the United Provinces of Agra and Oudh, India. | Rec. trav. chim.                        | Recueil des travaux chimiques des Pays-Bas.  |
| Proc. Amer. Acad. Arts Sci.        | Proceedings of the American Academy of Arts and Sciences.                               | Rend. Accad. Sci. Fis. Mat. Napoli      | Rendiconto dell' Accademia delle Scienze Fisiche e Matematiche, Napoli.  |
| Proc. Amer. Gas Assoc.             | Proceedings of the American Gas Association.  | Rend. Ist. Lomb. Sci. Lett.             | Rendiconti dell' Reale Istituto Lombardo di Scienze e Lettere.   |
| Proc. Amer. Phil. Soc.             | Proceedings of the American Philosophical Society.                                      | Rensselaer Polyt. Inst. Bull.           | Rensselaer Polytechnic Institute Bulletin.   |
| Proc. Amer. Physiol. Soc.          | Proceedings of the American Physiological Society.                                      | Rep. Aust. Assoc. Sci.                  | Report of the Australian Association for the Advancement of Science.   |
| Proc. Amer. Soc. Biol. Chem.       | Proceedings of the American Society of Biological Chemists.                             | Rep. Brit. Assoc.                       | Report of the British Association for the Advancement of Science.  |
| Proc. Amer. Soc. Civ. Eng.         | Proceedings of the American Society of Civil Engineers.                                 | Res. Stud. State Coll. Washington       | Research Studies of the State College of Washington.   |
| Proc. Amer. Soc. Test. Mat.        | Proceedings of the American Society for Testing Materials.                              | Rev. Aluminium                          | Revue de l'Aluminium.  |
| Proc. Austral. Inst. Min. Met.     | Proceedings of the Australasian Institute of Mining and Metallurgy.                     | Rev. Chim. pure appl.                   | Revista de Química pura e applicada, Órgão de Sociedade Portuguesa de Química e Física.  |
| Proc. Camb. Phil. Soc.             | Proceedings of the Cambridge Philosophical Society.                                     | Rev. Fac. Quím. Ind. Agric.             | Revista de la Facultad de Química Industrial y Agrícola.   |
| Proc. Durham Phil. Soc.            | Proceedings of the University of Durham Philosophical Society.                          | Rev. Gén. Mat. Col. .                   | Revue Générale des Matières Colorantes.  |
| Proc. Eng. Soc. W. Pa.             | Proceedings of the Engineers' Society of Western Pennsylvania.                          | Rev. Met.                               | Revue de Métallurgie.  |
| Proc. Imp. Acad. Tokyo             | Proceedings of the Imperial Academy (Tokyo).  | Rev. Mod. Physics .                     | Reviews of Modern Physics.   |
| Proc. Indian Acad. Sci.            | Proceedings of the Indian Academy of Sciences.  | Rev. Sci. Instr.                        | Review of Scientific Instruments.  |
| Proc. Inst. Civ. Eng. .            | Proceedings of the Institution of Civil Engineers.                                      | Rocz. Chem. .                           | Roczniki Chemji organ Polskiego Towarzystwa Chemicznego.   |
| Proc. Inst. Mech. Eng.             | Proceedings of the Institution of Mechanical Engineers.                                 | Sborn. Trud. Ukrain. Chim. Inst. Odessa | Sbornik Trudov Ukrainського Nauchno-Issledova-Telskogo Chimitscheskogo Instituta Odessa.   |
| Proc. Internat. Cong. Soil Sci.    | Proceedings of the International Congress of Soil Science.                              |   |  |
| Proc. Internat. Soc. Soil Sci.     | Proceedings of the International Society of Soil Science.                               |   |  |
| Proc. K. Akad. Wetensch. Amsterdam | Koninklijke Akademie van Wetenschappen te Amsterdam. Proceedings (English version).     |   |  |
| Proc. Leningrad Dept. Inst. Fert.  | Proceedings of the Leningrad Departmental Institute of Fertilisers.                     |   |  |
| Proc. Muslim Assoc. .              | Proceedings of the Muslim Association for the Advancement of Science.                   |   |  |
| Proc. Nat. Acad. Sci..             | Proceedings of the National Academy of Sciences.  |   |  |



| ABBREVIATED TITLE.                       | JOURNAL.   |
|--|--|
| Science                                  | Science.   |
| Sci. Agric.                              | Scientific Agriculture.  |
| Sci. and Cult.                           | Science and Culture.   |
| Sci. et Ind.                             | Science et Industrie.  |
| Sci. Ind. Rep. Roure-Bertrand Fils       | Scientific and Industrial Reports of Roure-Bertrand Fils.                              |
| Sci. Mem. Univ. Saratov                  | Scientific Memoirs of the University of Saratov.                                       |
| Sci. Papers Inst. Phys. Chem. Res. Tokyo | Scientific Papers of the Institute of Physical and Chemical Research, Tokyo.           |
| Sci. Proc. Roy. Dublin Soc.              | Scientific Proceedings of the Royal Dublin Society.                                    |
| Sci. Quart. Nat. Univ. Peking            | Science Quarterly of the National University of Peking.                                |
| Sci. Rep. Hiroshima Tech. Sch.           | Scientific Reports of the Hiroshima Higher Technical School.                           |
| Sci. Rep. Tôhoku                         | Science Reports, Tôhoku Imperial University.   |
| Sci. Rep. Tokyo Bunrika Daigaku          | Science Reports of the Tokyo Bunrika Daigaku.  |
| Sci. Rep. Tsing Hua Univ.                | Science Reports of the National Tsing Hua University.                                  |
| Sci. Sect. Nat. Paint, Var. Assoc. Circ. | Scientific Section, National Paint, Varnish, and Lacquer Association, Inc., Circulars. |
| Sci. Trans. Roy. Dublin Soc.             | Scientific Transactions of the Royal Dublin Society.                                   |
| Scot. J. Agric.                          | Scottish Journal of Agriculture.   |
| Seifens.-Ztg.                            | Seifensieder-Zeitung.  |
| Sewage Works J.                          | Sewage Works Journal.  |
| Sitzungsber. Akad. Wiss. Wien            | Sitzungsberichte der Akademie der Wissenschaften, Wien.                                |
| Sitzungsber. Heidelberger Akad. Wiss.    | Sitzungsberichte der Heidelberger Akademie der Wissenschaften.                         |
| Sitzungsber. Preuss. Akad. Wiss. Berlin  | Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin.               |
| Smithsonian Misc. Coll.                  | Smithsonian Miscellaneous Collection.  |
| Soap                                     | Soap.  |
| Soap Trade Rev.                          | Soap, Perfumery and Cosmetic Trade Review.   |
| Soil Res.                                | Soil Research.   |
| Soil Sci.                                | Soil Science.  |
| Sparwirts.                               | Sparwirtschaft.  |
| Sprechsaal                               | Sprechsaal.  |
| Stahl u. Eisen                           | Stahl und Eisen.   |
| Stain Tech.                              | Stain Technology.  |
| Staz. sper. agr. ital.                   | Stazioni sperimentali agrarie italiane.  |
| Steam Eng.                               | Steam Engineer.  |
| Sugar Bull.                              | Sugar Bulletin.  |
| Suomen Kem.                              | Suomen Kemistilehti Acta Chemica Fennica.  |
| Superphosphat                            | Superphosphat.   |
| Superphosphate                           | Superphosphate.  |
| Svensk Kem. Tidskr.                      | Svensk Kemisk Tidskrift.   |
| Tasmanian Agric. J.                      | Tasmanian Agricultural Journal.  |
| Tech. Mitt. Krupp                        | Technische Mitteilungen Krupp.   |
| Tech. Publ. Tin Res. Counc.              | Technical Publications of the International Tin Research and Development Council.      |
| Tech. Rep. Tôhoku                        | Technology Reports of the Tôhoku Imperial University, Sendai, Japan.                   |
| Teer u. Bitumen                          | Teer und Bitumen.  |
| Tekn. Tidsk.                             | Teknisk Tidskrift.   |
| Textilber.                               | Melliand Textilberichte.   |
| Tids. Kjemi                              | Tidskrift for Kjemi og Bergvesen.  |
| Tonind.-Ztg.                             | Tonindustrie-Zeitung.  |
| Trans. Amer. Inst. Chem. Eng.            | Transactions of the American Institute of Chemical Engineers.                          |
| Trans. Amer. Inst. Metals                | Transactions of the American Institution of Metals.                                    |
| Trans. Amer. Inst. Min. Met. Eng.        | Transactions of the American Institute of Mining and Metallurgical Engineers.          |
| Trans. Amer. Soc. Mech. Eng.             | Transactions of the American Society of Mechanical Engineers.                          |
| Trans. Amer. Soc. Met.                   | Transactions of the American Society of Metals.  |

| ABBREVIATED TITLE.                                      | JOURNAL.  |
|---|---|
| Trans. Ceram. Soc.                                      | Transactions of the Ceramic Society.  |
| Trans. Dokuchaiev Soil Inst.                            | Transactions of the Dokuchaiev Soil Institute.  |
| Trans. Electrochem. Soc.                                | Transactions of the Electrochemical Society.  |
| Trans. Faraday Soc.                                     | Transactions of the Faraday Society.  |
| Trans. Inst. Min. Eng.                                  | Transactions of the Institution of Mining Engineers.  |
| Trans. Inst. Min. Met.                                  | Transactions of the Institution of Mining and Metallurgy.   |
| Trans. Inst. Plast. Ind.                                | Transactions of the Institute of the Plastics Industry.   |
| Trans. Inst. Rubber Ind.                                | Transactions of the Institution of the Rubber Industry.   |
| Trans. N. Eng. Inst. Min. Mech. Eng.                    | Transactions of the North of England Institute of Mining and Mechanical Engineers.  |
| Trans. New Zealand Inst.                                | Transactions of the New Zealand Institute.  |
| Trans. Nova Scotia Inst. Sci.                           | Transactions of the Nova Scotia Institute of Science.   |
| Trans. Opt. Soc.  | Transactions of the Optical Society.  |
| Trans. Roy. Irish Acad.                                 | Transactions of the Royal Irish Academy.  |
| Trans. Roy. Soc. Canada                                 | Transactions of the Royal Society of Canada.  |
| Trans. Roy. Soc. Edin.                                  | Transactions of the Royal Society of Edinburgh.   |
| Trans. Roy. Soc. S. Africa.                             | Transactions of the Royal Society of South Africa.  |
| Trans. Saratov Univ.                                    | Transactions of the Saratov University (Gelehrte Notizen der Saratover Staats Universität).                                     |
| Trop. Agric.  | Tropical Agriculturist (Ceylon).  |
| Trop. Agric. (Trinidad)                                 | Tropical Agriculture (Trinidad)   |
| Tsch. Min. Mitt.  | Mineralogische und Petrographische Mitteilungen (Zeitschrift für Kristallographie, Mineralogie, und Petrographie, Abteilung B). |
| U.S. Bur. Mines, Bull., Tech. Papers, and Rept. Invest. | United States Bureau of Mines, Bulletins, Technical Papers, and Reports of Investigations.                                      |
| U.S. Bur. Plant Ind.                                    | United States Bureau of Plant Industry.   |
| U.S. Dept. Agric. Bull. (or Circ.)                      | United States Department of Agriculture Bulletins (or Circulars).   |
| U.S. Hyg. Labor. Bull.                                  | United States Hygienic Laboratory Bulletins.  |
| U.S.P.  | United States Patent.   |
| U.S. Publ. Health Rep.                                  | United States Public Health Reports.  |
| Ukrain. Biochem. J.                                     | Ukrainian Biochemical Journal.  |
| Ukrain. Chem. J.  | Ukrainian Chemical Journal.   |
| Union S. Africa Dept. Agric. Bulls.                     | Union of South Africa Department of Agriculture Bulletins.  |
| Univ. Illinois Bull.                                    | University of Illinois Bulletins.   |
| Utah Agric. Coll. Exp. Sta. Bull.                       | Utah Agricultural College Experiment Station Bulletins.   |
| Verfkroniek   | Verfkroniek.  |
| Verh. Geol. Reichsanst. Wien                            | Verhandlungen der Geologischen Reichsanstalt in Wien.   |
| Verh. Ges. deut. Naturforsch. Aertze                    | Verhandlungen der Gesellschaft deutscher Naturforscher und Aertze.  |
| Vermont Agric. Exp. Sta. Bull.                          | Vermont Agricultural Experiment Station Bulletin.   |
| Vet. Rec.   | Veterinary Record.  |
| Virginia (Blacksburg) Exp. Sta. Bull.                   | Virginia (Blacksburg) Experiment Station Bulletin.  |
| Virginia Truck Exp. Sta. Bull.                          | Virginia Truck Experiment Station Bulletin.   |
| Welsh J. Agric.   | Welsh Journal of Agriculture.   |
| Wiss. Veroff. Siemens-Werken                            | Wissenschaftliche Veröffentlichungen aus den Siemens-Werken.  |
| Woch. Brau.   | Wochenschrift für Brauerei.   |
| World's Paper Tr. Rev.                                  | World's Paper Trade Review.   |
| Z. anal. Chem.  | Zeitschrift für analytische Chemie.   |
| Z. anorg. Chem.   | Zeitschrift für anorganische und allgemeine Chemie.   |
| Z. Biol.  | Zeitschrift für Biologie.   |

| ABBREVIATED TITLE.                | JOURNAL.  | ABBREVIATED TITLE.         | JOURNAL.  |
|-----------------------------------|---|----------------------------|---|
| Z. deut. Geol. Ges. .             | Zeitschrift der deutschen Geologischen Gesellschaft.  | Z. pr. Geol.               | Zeitschrift für praktische Geologie.  |
| Z. Elektrochem.                   | Zeitschrift für Elektrochemie.  | Z. Spiritusind. .          | Zeitschrift für Spiritusindustrie.  |
| Z. Fleisch-Milch-Hyg.             | Zeitschrift für Fleisch- und Milch-Hygiene.   | Z. Unters. Lebensm..       | Zeitschrift für Untersuchung der Lebensmittel.  |
| Z. ges. Brauw. .                  | Zeitschrift für das gesamte Brauwesen.  | Z. Ver. deut. Ing.         | Zeitschrift Vereins deutscher Ingenieure.   |
| Z. ges. exp. Med.                 | Zeitschrift für die gesamte experimentelle Medizin.   | Z. Ver. deut. Zucker-Ind.  | Zeitschrift des Vereins der deutschen Zucker-Industrie (now changed to Z. Wirts. Zuckerind.). |
| Z. ges. Naturwiss.                | Zeitschrift für die gesamte Naturwissenschaft.  | Z. Vitaminforsch.          | Zeitschrift für Vitaminforschung.   |
| Z. ges. Schiess- u. Sprengstoffw. | Zeitschrift für das gesamte Schiess- und Sprengstoffwesen.  | Z. Wirts. Zuckerind.       | Zeitschrift der Wirtschaftsgruppe Zuckerindustrie (Verein der Deutschen Zucker-Industrie).    |
| Z. Hyg. .                         | Zeitschrift für Hygiene und Infektionskrankheiten.  | Z. wiss. Biol. .           | Zeitschrift für wissenschaftliche Biologie.   |
| Z. Instrument.                    | Zeitschrift für Instrumentenkunde.  | Z. wiss. Mikrosk.          | Zeitschrift für wissenschaftliche Mikroskopie und mikroskopische Technik.                     |
| Z. Krist. .                       | Zeitschrift für Kristallographie.   | Z. wiss. Phot. .           | Zeitschrift für wissenschaftliche Photographie, Photophysik und Photochemie.                  |
| Z. Metallk.                       | Zeitschrift für Metallkunde.  | Z. Zuchtung                | Zeitschrift für Zuchtung.   |
| Z. Parasitenk. .                  | Zeitschrift für Parasitenkunde.   | Z. Zuckerind. Czecho-slov. | Zeitschrift für die Zuckerindustrie der Czechoslovakischen Republik.                          |
| Z. Pflanz. Düng.                  | Zeitschrift für Pflanzenernährung, Düngung, und Bodenkunde ( <i>title now changed to</i> Bodenkunde und Pflanzenernährung). | Zavod. Lab.                | Zavodskaja Laboratorija.  |
| Z. Pflanzenkr. Pflanzenschutz     | Zeitschrift für Pflanzenkrankheiten (Pflanzenpathologie) und Pflanzenschutz.  | Zellstoff u. Papier        | Zellstoff und Papier.   |
| Z. Physik                         | Zeitschrift für Physik.   | Zement .                   | Zement.   |
| Z. physikal. Chem. .              | Zeitschrift für physikalische Chemie.   | Zentr. Bakt.               | Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten.                     |
| Z. physikal. chem. Unterr.        | Zeitschrift für den physikalischen und chemischen Unterricht.   | Zentr. Min.                | Zentralblatt für Mineralogie, Geologie und Paläontologie.                                     |
| Z. physiol. Chem.                 | Hoppe-Seyler's Zeitschrift für physiologische Chemie.   | Zentr. Zuckerind.          | Zentralblatt für Zuckerindustrie.   |

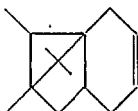
# ERRATA.

## ABSTRACTS A., 1934 (PURE CHEMISTRY).

| Page. | Col. | Line. |   |
|-------|------|-------|---|
| 535   | 1    | 7     | For "3-hydroxy-" read "2-hydroxy."            |
|       |      | 8     | For "2:8'" read "1:8'."                       |
| 897   | 2    | 26    | For "oxime" read "hydroxylamino-oxime."       |
| 897   | 2    | 28    | For "d-pinonic acid" read "d-pinononic acid." |

### 1935.

|      |   |     |  |
|------|---|-----|--|
| 481  | 1 | 2   | The "CO" in formula (I) following this line should be deleted.   |
| 1130 | 1 | 30  | For " $\text{o-C}_6\text{H}_4(\text{OH})_2$ " read "phloroglucinol."   |
| 1354 | 1 | 3*  | For "LECHZYCK" read "LECKZYCK."  |
| 1354 | 2 | 23* | After " $\text{AgNO}_3$ " insert "followed by MeI."  |
| 1354 | 2 | 22* | For "173—184°" read "173—174°."  |
| 1371 | 1 | 17* | For " $\text{C}_{10}\text{H}_7\text{CO}_2\text{H}$ " read " $\text{C}_{10}\text{H}_7\text{CH}_2\text{CO}_2\text{H}$ ." |
| 1378 | 2 | 35  | For " $\text{CHPh:CHCO}_2\text{H}$ " read " $\text{CHPh:CHCO}_2\text{H}$ ."  |
| 1472 | 1 | 16  | For "cu. m." read "100 cu. m."   |
| 1503 | 1 | 20* | The cedrene formula should be  |



|      |   |       |   |
|------|---|-------|---|
| 1503 | 1 | 25—27 | For "α- and β-2-anilinocamphor-10-sulphonic" read "α- and β-2-anilinocamphane-10-sulphonic."                      |
| 1507 | 1 | 28*   | For " $\text{N}(\text{CH}_2\text{CH}_2\text{NH}_2)_3$ " read " $\text{Net}_2\text{CH}_2\text{CH}_2\text{NH}_2$ ." |

### 1936.

|     |   |       |   |
|-----|---|-------|---|
| 6   | 2 | 6     | For "ALEXOPOULOUS" read "ALEXOPOULOS."  |
| 16  | 1 | 29*   | For "GYUIAI" read "GYULAI."   |
| 18  | 1 | 22    | For "NEUBERGER" read "NEUBURGER."   |
| 57  | 1 | 15*   | For "BLONQUIST" read "BLONQVIST."   |
| 62  | 2 | 6*    | For "HEWITT" read "HEWETT."   |
| 80  | 1 | 16*   | For "155—165°/16 mm." read "155—160°/16 mm."  |
| 87  | 2 | 14*   | For "BEHAGEL" read "BEHAGHEL."  |
| 88  | 1 | 11*   | For "JUNUSOV" read "YUNUSOV."   |
| 88  | 2 | 11    | For "H. L. CHEN" read "A. L. CHEN."   |
| 118 | 1 | 2     | For "contains vitamin-A and" read "contains no vitamin-A but."  |
| 140 | 2 | 29    | For "WIBURG" read "WIBERG."   |
| 171 | 2 | 17    | For "FISHGOLD" read "FISCHGOLD."  |
| 190 | 2 | 22*   | For "GLATTFIELD" read "GLATTFELD."  |
| 194 | 1 | 11*   | For "BOUNATT" read "BONNETT."   |
| 269 | 1 | 23*   | For "57" read "58."   |
| 283 | 2 | 6*    | For "CASSELL" read "CASSEL."  |
| 302 | 2 | 7     | For "58" read "8."  |
| 315 | 2 | 35    | For "but are in favour of (a) or (b)" read "and are not satisfied by either (a) or (b) but require an intermediate form of greater stability." Also a vertical linking is missing in formula (b) at the left. |
| 372 | 1 | 19*   | For "LITTLE" read "LILLIE."   |
| 375 | 1 | 16*   | For "R. K. KNOEFEL" read "P. K. KNOEFEL."   |
| 392 | 1 | 28*   | For "plan" read "plant."  |
| 428 | 2 | 25*   | For "HAYA" read "HARA."   |
| 452 | 2 | 18*   | For " $\text{CH}_2\text{CMcCH}_2\text{OH}$ " read " $\text{CH}_2\text{CHCHMeOH}$ ."   |
| 460 | 1 | 10*   | For "methylallyl-n-propylarsine" read "methylethyl-n-propylarsine."   |
| 487 | 2 | 9*    | For "I. IMAI" read "T. IMAI."   |
| 494 | 2 | 28    | For "bronchial" read "branchial."   |
| 500 | 1 | 27*   | For "F. FEULGEN" read "R. FEULGEN."   |
| 505 | 2 | 19*   | For "RODRIGUEZ-OLLERAS" read "RODRIGUEZ-OLLERAS."   |
| 525 | 2 | 7     | For "ANDERSON" read "ANDERSEN."   |
| 558 | 1 | 26    | For "Joule-Thompson" read "Joule-Thomson."  |
| 564 | 1 | 1     | For "NINS" read "NIMS."   |
| 610 | 1 | 30    | For "J. RICHARDSON" read "T. RICHARDSON."   |
| 610 | 1 | 7     | For "RUZICKA" read "RUZICZKA."  |
| 621 | 1 | 21*   | For "CANTEROW" read "CANTAROW."   |
| 649 | 2 |       | The title of the last abstract should read: "Analytic studies in plant respiration. VI. Relation . . . BARKER. Plant respiration. IV. Relation . . .," the two papers being of different series.              |
| 694 | 1 | 6*    | For "60" read "61."   |
| 696 | 1 | 24    | For "60" read "61."   |
| 696 | 1 | 1*    | For "60" read "61."   |
| 753 | 2 | 10    | For "O. AUGUSTE" read "C. AUGUSTE."   |
| 793 | 1 | 27*   | For "BERTHER" read "BERTHIER."  |
| 812 | 2 | 1     | For "1926" read "1936."   |
| 826 | 2 | 37—39 | The sentence should read "The structures of the $\text{COMe}_2$ compounds of glucose-, galactose-, and mannose-dibenzylmercaptals assigned by Pacsu need revision."   |

\* From bottom.

| Page. | Col. | Line.     |   |
|-------|------|-----------|---|
| 827   | 1    | 13        | For "OH·CH <sub>2</sub> ·CO <sub>2</sub> ·CH <sub>2</sub> ·OAc" read "OH·CH <sub>2</sub> ·CO·CH <sub>2</sub> ·OAc." |
| 869   | 2    | 5*        | For "MAMEL" read "MAMOLL."  |
| 875   | 2    | 12*       | For "C. H. HAGEDORN" read "H. C. HAGEDORN."   |
| 891   | 1    | 2         | For "VALLETTE" read "VALETTE."  |
| 911   | 1    | 27*       | For "CHANDUN" read "CHAUDUN."   |
| 912   | 2    | 29        | For "FISCHER" read "TISCHER."   |
| 918   | 1    | 18*       | For "LEIPIENSKI" read "LEIPUNSKI."  |
| 926   | 1    | 22*       | For "non-" read "iron-" in each case.   |
| 930   | 2    | 25        | After "Data" insert "obtained by a new static method."  |
| 966   | 1    | 7, 8      | For "m.p. . . 1019" read "m.p. 67—68°, is formed [Morrell and Samuels (A., 1932, 1019) found 62—62.5°]."            |
| 968   | 2    | 24        | After "glucose" add "6-acetate."  |
| 971   | 1    | 16        | For "ultracentrifuge" read "viscosimetric."   |
| 975   | 2    | 5*        | For "CARSON" read "CORSON."   |
| 980   | 2    | 2* and 1* | For "it is suggested . . . anthracene." read "their suggested structure for diisoeugenol is contested."             |
| 991   | 1    | 5*        | After "product" insert "of m.p. 193—195°."  |
| 1000  | 2    | 8         | For "WEIGAND" read "WEYGAND."   |
| 1006  | 1    | 24        | For "E. J. MUELLER" read "E. JUSTIN-MUELLER."   |
| 1020  | 2    | 12        | For "LOEDER" read "LOEPER."   |
| 1130  | 1    | 5*        | For "SITNIKOV" read "SITNIK."   |
| 1143  | 1    | 9         | For "FERDMAN" read "FERDMANN."  |
| 1143  | 1    | 10        | For "FAINSCHMIDT" read "FEINSCHMIDT."   |
| 1184  | 1    | 3* to 1*  | The new compounds described in this paper are recorded in a supplementary abstract on page 1496.                    |
| 1193  | 1    | 11*       | For "thread" read "fibre."  |
| 1193  | 1    | 9*        | For "curves" read "arcs."   |
| 1204  | 1    | 20*       | For "W. J. HELD" read "W. JAHN-HELD."   |
| 1207  | 1    | 26        | For "SEHLIGIN" read "SCHLIGIN."   |
| 1215  | 2    | 24        | For "DUBOULEZ" read "DUBOULOZ."   |
| 1331  | 1    | 5         | For "DIETZ" read "DEITZ."   |
| 1345  | 1    | 13        | After "factors" insert "for the dimerisation of cyclopentadiene."   |
| 1352  | 2    | 24*       | For "CALVERT" read "CALVET."  |
| 1490  | 1    | 18*       | For "COLOGNE" read "COLONGE."   |
| 1492  | 2    | 13—14     | For "3:5-isoPropylideneglucose" read "1:2-isoPropylideneglucose."   |
| 1492  | 2    | 18        | Before "with" insert "this."  |
| 1492  | 2    | 19        | After "Ag <sub>2</sub> O" insert "followed by reduction."   |
| 1531  | 1    | 17        | For "SIEBER" read "SIEBERT."  |
| 1571  | 2    | 21*       | For "FISCHER" read "TISCHER."   |

## ABSTRACTS B., 1936 (APPLIED CHEMISTRY).

|      |   |     |  |
|------|---|-----|--|
| 35   | 1 | 27  | For "BARNETT" read "BARNETTE."               |
| 46   | 1 | 28  | For "HARKASSOWITZ" read "HARRASSOWITZ."      |
| 91   | 1 | 2   | For "MALISHER" read "MALISHEV."              |
| 100  | 1 | 3   | For "Weighing" read "Weighting."             |
| 117  | 1 | 28* | For "SALZBURG" read "SALZBERG."              |
| 165  | 2 | 23  | For "KMINEL" read "KMINIK."                  |
| 202  | 1 | 7*  | For "CREAMER" read "CRAEMER."                |
| 207  | 2 | 11* | For "RHEIM" read "RHIEM."                    |
| 252  | 1 | 22* | For "FRIESE" read "FREISE."                  |
| 341  | 2 | 9*  | For "RECKENFORDER" read "RECKENDORFER."      |
| 366  | 2 | 1*  | For "MENNEVICH" read "MENNERICH."            |
| 401  | 1 | 28  | For "KLONNE" read "KLÖNNE."                  |
| 467  | 2 | 3*  | For "RODGERS" read "ROGERS."                 |
| 526  | 1 | 8*  | For "BAYLISS" read "BAYLIS."                 |
| 559  | 2 | 29  | For "MIGHREN" read "MYHREN."                 |
| 590  | 1 | 2*  | For "BARDLSEY" read "BARDSLEY."              |
| 591  | 2 | 10* | For "GELD" read "HELD."                      |
| 611  | 1 | 13  | For "MIASKARAN" read "BHASKARAN."            |
| 641  | 2 | 11* | For "BOOZE" read "BOOGE."                    |
| 658  | 2 | 16  | For "SHIORI" read "SHIOIRI."                 |
| 674  | 1 | 7   | For "BRYNE" read "BYRNE."                    |
| 750  | 2 | 6*  | For "WALKER" read "WALTER."                  |
| 755  | 2 | 1*  | For "E. B. SMITH" read "F. B. SMITH."        |
| 798  | 1 | 15  | For "J. M. CULLOUGH" read "J. McCULLOUGH."   |
| 851  | 2 | 25  | For "BREZEALE" read "BREAZEALE."             |
| 903  | 2 | 19  | For "FERRES" read "FERREE."                  |
| 958  | 2 | 4*  | For "DONGIN" read "DOGNIN."                  |
| 965  | 2 | 28* | For "GOFTMAN" read "HOFTMAN."                |
| 1001 | 2 | 12* | For "GEN. CHEM CO." read "GEN. ELECTRIC CO." |
| 1068 | 1 | 20* | For "cantharadin" read "cantharidin."        |
| 1094 | 1 | 2   | For "BERMANN" read "BERGMANN."               |
| 1101 | 2 | 20  | For "UDHE" read "UHDE."                      |
| 1167 | 2 | 8*  | For "JACOBSEN" read "JACOBSON."              |
| 1170 | 1 | 18  | For "NOSTITZ" read "NITZSCH."                |
| 1185 | 1 | 10* | For "BRANDT" read "BRANDT."                  |
| 1222 | 1 | 1*  | For "GLATINE" read "GELATINE."               |